

*REPLACED BY
ART 34 AMDT*

WHAT IS CLAIMED IS:

1. A method for producing polyunsaturated fatty acids from algae, comprising the step of applying at least growth-limiting factor to an algae culture, causing growth arrest of said algae culture and production and stocking by algae in culture of polyunsaturated fatty acids.
- 5 2. The process of claim 1, wherein the growth-limiting factor is silicate deprivation.
- 10 3. The process of claim 1, wherein the growth-limiting factor is a nutrient deprivation.
4. The process of claim 1, 2 or 3, wherein more than one growth-limiting factor is applied.
- 15 5. The process of claim 1, 2, 3 or 4, wherein the algae is diatomaceous *Chaetoceros gracilis*.
6. The process of claim 1, 2, 3 or 4, wherein the algae is diatomaceous *Skeletonema costatum*.
- 15 7. The process of claim 1, 2, 3, 4, 5 or 6, wherein the growth-limiting factor is applied at the end of the exponential growth phase.
- 20 8. The process of claim 1, 2, 3, 4, 5, 6 or 7, wherein the growth limiting factor is applied once the algae culture has reached a concentration of at least 10^7 cells/mL.